



**RESPONSE UNDER 37 CFR 1.116
EXPEDITED PROCEDURE
EXAMINING GROUP 2817**

PATENT
Attorney Docket No. 401251/TAKADA

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:

ISHIDA et al.

Art Unit: 2817

Application No. 09/877,037

Examiner: S. Jones

Filed: June 11, 2001

For: **MATCHING CIRCUIT AND
SEMICONDUCTOR DEVICE**

PENDING CLAIMS

13. A monolithic microwave integrated circuit (MMIC) comprising:
a transistor having an input terminal and an insulating film around the transistor,
affecting input capacitance of the transistor, the input capacitance changing directly with
thickness of the insulating film; and
a metal-insulator-metal (MIM) capacitor including two metal electrodes separated by
part of the insulating film, one of the metal electrodes being connected to the input terminal of
the transistor, capacitance of the MIM capacitor changing inversely with the thickness of the
insulating film, whereby variations in the input capacitance of the transistor and the capacitance
of the MIM capacitor due to variations in the thickness of the insulating film are compensated.

14. The MMIC according to claim 13 including a bias circuit connected in parallel with
the MIM capacitor.

15. A monolithic microwave integrated circuit (MMIC) comprising:
a transistor having an output terminal and an insulating film around the transistor,
affecting output capacitance of the transistor, the output capacitance changing directly with
thickness of the insulating film; and
a metal-insulator-metal (MIM) capacitor including two metal electrodes separated by
part of the insulating film, one of the metal electrodes being connected to the output terminal of
the transistor, capacitance of the MIM capacitor changing inversely with the thickness of the

insulating film, whereby variations in the output capacitance of the transistor and the capacitance of the MIM capacitor due to variations in the thickness of the insulating film are compensated.

16. The MMIC according to claim 14 including a bias circuit connected in parallel with the MIM capacitor.